

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A transport stream recording device for recording input transport streams on a data recording medium, comprising:

a header attachment section configured to attach a header to a transport packet having said transport stream and generating a source packet;

a detector configured to detect transport packets containing entry points from among said transport packets;

a map generator configured to generate an entry point map listing with transport packet positions containing said entry points; and

a record section configured to record a predetermined number of said source packets ~~on~~ to said data recording medium as aligned units, and recording said entry point map to said recording medium.

wherein the data length of said aligned units is equivalent to an integer multiple of the sector length of said data recording medium.

Claim 2 (Previously Presented): A transport stream recording device according to claim 1, further comprising:

a counter configured to count the number of transport packets having said transport stream; and

null packet generator configured to generate null packets according to the count from said counter.

Claim 3 (Original): A transport stream recording device according to claim 1, wherein the beginning of each said aligned unit is periodically placed in the beginning of a sector.

Claim 4 (Canceled)

Claim 5 (Original): A transport stream recording device according to claim 3, wherein said sector length is equivalent to a multiple of the data length of said aligned unit.

Claim 6 (Canceled).

Claim 7 (Currently Amended): A transport stream recording device according to claim [[6]] 1, wherein said map generator lists the PTS of an I picture in said entry point map listing.

Claim 8 (Currently Amended): A transport stream recording method for recording input transport streams on a data recording medium, comprising the steps of:

- adding a header to the transport packet comprising the transport stream; [[and]]
- detecting transport packets containing entry points from among said transport packets;
- generating an entry point map listing with transport packet positions containing said entry points; and,
- recording a predetermined specified number of said source packets ~~on~~ to said data recording medium as aligned units,
- recording said entry point map to said recording medium,

wherein the data length of said aligned units is equivalent to a multiple of the sector length of said data recording medium.

Claim 9 (Original): A transport stream recording method according to claim 8, further comprising the steps of:

counting the number of transport packets comprising said transport stream; and
generating null packets according to the count value from said counting step.

Claim 10 (Original): A transport stream recording method according to claim 8, wherein the beginning of each said aligned unit is periodically placed in the beginning of a sector.

Claim 11 (Canceled).

Claim 12 (Original); A transport stream recording method according to claim 10, wherein said sector length is equivalent to a multiple of the data length of said aligned unit.

Claim 13 (Canceled).

Claim 14 (Currently Amended): A transport stream recording method according to claim [[13]] 8, wherein said transport stream recording method comprises a step of listing the presentation time stamp (PTS) of an I picture in said entry point map listing.

Claim 15 (Currently Amended): A computer readable carrier including program instructions that cause a computer to implement a method of recording transport ~~stream~~ streams programs, the recording method comprising:

attaching a header to a transport packet constituting a transport stream and generating a source packet; [[and]]

detecting transport packets containing entry points from among said transport packets;
generating an entry point map listing with transport packet positions containing said entry points; and,

recording a predetermined specified number of said source packets ~~on~~ to said data recording medium as aligned units,

recording said entry point map to said recording medium,

wherein the data length of said aligned units is equivalent to a multiple of the sector length of said data recording medium.

Claim 16 (Previously Presented): The computer readable carrier of claim 15, wherein the computer program instructions that cause a computer to implement a method of recording transport stream program further comprises the steps of:

counting the number of transport packets comprising said transport stream; and
generating null packets according to the count value from said counting process.

Claim 17 (Previously Presented): The computer readable carrier of claim 15, wherein the beginning of each said aligned unit is periodically placed in the beginning of a sector.

Claim 18 (Canceled).

Claim 19 (Previously Presented): The computer readable carrier of claim 17, wherein said sector length is equivalent to a multiple of the data length of said aligned unit.

Claim 20 (Canceled).

Claim 21 (Currently Amended): The computer readable carrier of claim ~~[[20]]~~ 15, wherein the computer program instructions that cause a computer to implement a method of recording transport ~~stream programs~~ streams comprises a step of listing the PTS of an I picture in said entry point map listing.

Claims 22 – 26 (Canceled).

Claim 27 (Currently Amended): A transport stream reproduction device for reproducing the transport stream recorded in aligned units on the recording medium, comprising:

a reproduction section;

a calculating section configured to calculate ~~[[the]]~~ an address corresponding to ~~[[the]]~~ a designated reproduction start position, and, to calculate an address corresponding to entry points recorded in said transport packet nearest said designated reproduction start position; and

a controller configured to acquire an entry point map from said recording medium, compare a PTS listed in said entry point map with a designated reproduction start position,

and search an entry point nearest to said specified reproduction start position, and to control
said reproduction section ~~so that to read-out of said transport packets of said transport stream~~
~~starts from the calculated address~~ nearest said specified reproduction start position in said
recording medium,

wherein said aligned units are comprised of a predetermined specified number of
collected source packets attached with headers to constitute said transport stream.

Claim 28 (Canceled).

Claim 29 (Previously Presented): A transport stream reproduction device according
to claim 27, further comprising:

a deletion section configured to convert a designated deletion range into said aligned
unit data region and to delete said converted aligned units recorded on said transport stream.

Claim 30 (Currently Amended): A transport stream reproduction method for a
transport stream reproduction device for reproducing transport streams recorded in aligned
units recorded on a recording medium comprising the steps of:

~~calculating the address corresponding to the designated reproduction start position;~~
~~and~~

calculating an address corresponding to a designated reproduction start position, and,
calculating an address corresponding to entry points recorded in said transport packet; and,

~~reading out said transport packet from said calculated address and control the start of~~
~~said reproduction section,~~

acquiring an entry point map from said recording medium,

comparing a PTS listed in said entry point map with a designated reproduction start position,

searching an entry point nearest to said specified reproduction start position in said recording medium, and

controlling said reproduction section so that read-out of transport packets of said transport stream start from said nearest entry point,

wherein said aligned units comprises a predetermined specified number of collected source packets attached with headers to constitute said transport stream.

Claim 31 (Canceled).

Claim 32 (Currently Amended): A transport stream recording device for recording transport streams in sector units of data on a data recording medium, comprising:

header attachment means for attaching a header to a transport packet constituting a transport stream and generating a source packet;

classifying means for subdividing said source packet into a specified number of pieces and generating an aligned unit; [[and]]

detecting means for detecting transport packets containing entry points from among said transport packets;

map generating means for generating an entry point listing with transport packet positions containing said entry points; and,

record means for recording said aligned units ~~on~~ to said recording means and for recording said entry point map to said recording means,

wherein the data quantity of the aligned unit is equivalent to a multiple of the data quantity recordable on one sector of said data recording medium.

Claim 33 (Original): A transport stream recording device according to claim 32, further comprising:

counting means for counting the number of transport packets having the transport stream; and

null packet generating means for generating null packets according to the count from said counting means.

Claim 34 (Canceled).

Claim 35 (Currently Amended): A transport stream recording device according to claim ~~[[34]]~~ 33, wherein said detecting means detects transport packets containing I picture data as the transport packet containing data serving as reproduction start positions, and said map generating means ~~for making entry point maps~~ writes the count from said counting means for said transport packets containing said I picture data into the entry point map, and also writes said I picture PTS into said entry point map.

Claim 36 (Currently Amended): A transport stream recording method of a transport stream recording device for recording input transport streams in sector units of data on a data recording medium, comprising:

attaching a header to a transport packet constituting said transport stream and generating a source packet;

detecting transport packets containing entry points from among said transport packets;
generating an entry point map listing with transport packet positions containing said
entry points; and,

subdividing the source packet generated in the header attachment step into a specified number of pieces each to generate an aligned unit; and

recording the aligned units ~~on said,~~ and said entry point map to said data recording medium, respectively,

wherein the data quantity of the aligned unit is equivalent to a multiple of the data quantity recordable on one sector of said data recording medium.

Claim 37 (Currently Amended): ~~A program recording medium for recording a transport stream recording program for recording the input transport streams in sector units of data on a data recording medium, wherein said transport stream recording program comprises~~
A computer readable carrier including program instructions that cause a computer to implement a method of recording transport streams, the recording method comprising:

attaching a header to a transport packet constituting a transport stream and generating a source packet;

detecting transport packets containing entry points from among said transport packets;
generating an entry point map listing with transport packet positions containing said
entry points; and,

subdividing the source packets generated in said header attachment step into a specified number of pieces and generating an aligned unit; and

recording the aligned units ~~on said,~~ and said entry point map to said data recording medium, respectively,

wherein the data quantity of the aligned unit is equivalent to a multiple of the data quantity recordable on one sector of said data recording medium.

Claim 38 (Previously Presented): A data recording medium having a transport stream recorded thereon by a transport stream recording device, in accordance with the method of claim 8.

Claim 39 (Currently Amended): A transport stream reproduction device for reproducing the transport stream recorded in aligned units on the recording medium, comprising:

~~specifying means for specifying the reproduction start position, a calculation means to calculate the address of said data recording medium corresponding to said designated reproduction start position;~~

means for acquiring an entry point map from said recording medium,

means for comparing the PTS listed in said entry point map with a designated reproduction start position,

means for searching the entry point adjacent to said specified reproduction start position, and,

means for controlling said reproduction section so that read-out of transport packets of said transport stream start from the nearest entry point of said designated reproduction start position of said recording medium; and,

~~read-out means for starting readout of said transport packet from address on said data recording medium calculated by said calculation means;~~

wherein the data length of said aligned units is equivalent to a multiple of the sector length of said data recording medium.

Claim 40 (Canceled).

Claim 41 (Original): A transport stream reproduction device according to claim 39, further comprising:

conversion means for converting a specified erase range into data area for said aligned units; and

deletion means for deleting said transport stream recorded in said data area for said aligned units converted by said conversion means.

Claims 42-43 (Canceled).

Claim 44 (Previously Presented): A medium according to claim 38, wherein said source packet contains null packets.

Claim 45 (Previously Presented): A medium according to claim 38, wherein the beginning of each said aligned unit is periodically placed in the beginning of a sector.

Claim 46 (Previously Presented): A medium according to claim 38, wherein said sector length is equivalent to an integer multiple of the data length of said aligned unit.

Claim 47 (Previously Presented): A data recording medium having a transport stream expressed thereon in accordance with the method of claim 8.